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Daniel B. Ruble  
Registration No. 40,794

DATE : June 13, 2007

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant:	Grah et al	Group Art Unit:	1772
Serial No.:	10/749,451	Examiner:	P. Butler
Filing Date:	December 31, 2003	Docket No.:	D-43584-01
Title:	Method of Shrinking a Film		

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Alexandria, VA 22313-1450

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Applicants request review of the final Office Action mailed December 14, 2006. The period for response has been extended until June 14, 2007 by the enclosed Petition for Extension of Time. No amendments are filed with this request.

This Request is being filed with a Notice of Appeal.

This Request is made for the reasons stated in the Remarks section beginning on the following page. The Remarks section comprises no more that five pages.

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864/433-2496

Respectfully submitted,

Daniel B. Ruble  
Registration No. 40,794

Date: June 13, 2007

### Remarks

#### I. The previous Office action ignored established case law regarding §102(e).

Claims 1-16, 18-24, 27-32, and 36 were rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent Application Publication 2004/0241482 (“the ‘482 publication”) filed June 2, 2003 (corresponding to Serial No. 10/452,892 by Grah and Ahlgren).

Applicants submitted a Rule 1.132 Declaration of Grah and Havens (who are the inventors of the present application) to establish that they conceived the subject matter disclosed in the ‘482 publication that is relied upon in the §102(e) rejection. Thus, the subject matter disclosed in the ‘482 publication is not an invention “by another” as required by §102(e) and is therefore not prior art.

The Office action errs by requiring that Havens also be an applicant of the ‘482 publication (i.e., the ‘892 application) in order for the reference to be removed as §102(e) art. (Office action mailed Dec. 14, 2006 at page 13, §3.) This requirement is contrary to established law.

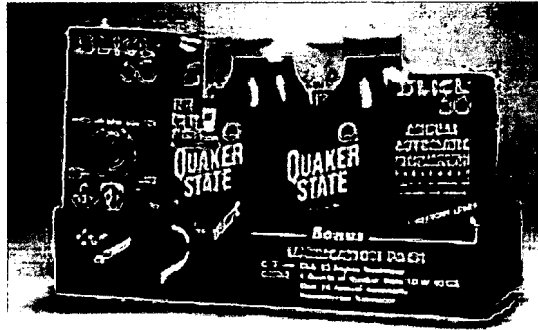
A rule 132 affidavit may be used to overcome a 102(e) rejection where the named applicants of the earlier application do not include the applicants of the subsequent application. *In re Mathews*, 161 USPQ 276 (CCPA 1969). The Response mailed September 27, 2006 at pages 3 to 4 provides more detail regarding this issue; and in particular page 4 discusses how the *Mathews* case is on point with this issue in the present case. The previous Office action ignored the *Mathews* precedent.

#### II. Obviousness Rejection

The Office action errs in rejecting claims 1-16, 18-24, 27-32, and 36 as obvious based on the combination of Noel ‘287, Dupire ‘265, and Dunn ‘559. The reasons for this error are briefly discussed in the subsections A through D below.

As background, the claim 1 aspect of the invention is directed to a method of shrinking a film (i.e., causing a film to become smaller – or if restrained, to increase the tension in the film). Previously known methods of shrinking a film include immersing the shrink film in

a hot-water bath or conveying the shrink film through a hot-air tunnel. An exemplary use of a shrink film is to bundle individual units together, as shown in the picture below.



The present invention is an entirely new way of shrinking a film. The new method is accomplished by including single-walled carbon nanotube (SWNT) material in the shrink film, and then exposing the film to radiation to *structurally disrupt* a portion of the SWNT material to cause the film to shrink, or if restrained, to increase the tension in the film.

The Office action combined several references to arrive at the present invention. Noel '287 teaches that a shrink film can be heat sealed together using infrared radiation. (Col. 5, line 57.)<sup>1</sup> Dupire '265 teaches that SWNT may be oriented in a polymer to reinforce the polymer for use, for example, to make fibers and filaments. (Col. 2, lines 27-41; col. 3, lines 11-13.) Dunn '559 teaches food preservation by pulsing intense light to inactivate microorganisms.

A. The reinforcement reason for adding the SWNT runs counter to structurally disrupting the SWNT.

The previous Office action proposes that one of ordinary skill would have included the SWNT material of Dupire to reinforce the film of Noel. (Office action mailed Dec. 14, 2006 at p.7, lines 9-14.) The Office action further proposes that the ordinary skilled person would have also packaged a food with the SWNT-reinforced Noel film, and pulsed intense light to inactivate the food microorganisms per Dunn '559. (*Id.* at page 8, lines 1-7.) As a result, the

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<sup>1</sup> Noel does not teach exposing the film to radiation to shrink the film, contrary to the implication of the Office action mailed Dec. 14, 2006 at page 6, three lines from bottom. The only method of shrinking the film that Noel teaches is using a hot-water shrink tunnel. (Col. 22, lines 10-13.) In any event, Noel fails to teach anything regarding exposing to sufficient infrared radiation to structurally disrupt SWNT material.

Office action argues, “the carbon nanotubes would necessarily be structurally disrupted.” (*Id.* at p.8, lines 11-12.)

The problem with this hindsight combination of references is that the proposed reason for combining the references runs directly contrary to the result that the Office action claims would have necessarily happened. The proposed reason to include SWNT in the Noel film was reinforce the film. So it runs contrary to reason that the skilled person would have applied radiation to structurally disrupt the SWNT in the SWNT-reinforced Noel film, because destroying the SWNT would also destroy the SWNT reinforcement function – the very reason given for including the SWNT in the first place.

To counter this argument, the most recent Office action proposes a new motivation – the desire for a porous film to release moisture. (*Id.* at page 14, lines 6-7.) But the Office action fails to provide any reason why one of skill in the art would expect the film to become porous after the light-pulse exposure -- or even why one of skill would want to release moisture from the Noel packaged food. To the contrary, Noel is directed to *reducing* package seal failures (col. 1, lines 58-59), not to creating holes in the package to release moisture and thus also destroy the sealing function of the package.

B. The inclusion of SWNT to reinforce polymer runs contrary to the Dunn light pulse to preserve food.

There is another problem with the proposed hindsight combination of references. The reason for applying the pulsed intense light of Dunn is to kill food-borne microorganisms. Yet the inclusion of SWNT material in the Noel film would siphon off at least a portion of this intense light energy if the SWNT also absorbs intense light to structurally disrupt. It is therefore contrary to reason that a skilled person would want to pulse intense light to kill microorganisms, yet include SWNT material to divert light energy from killing microorganisms. Accordingly, one of skill would not be motivated to include SWNT in a film used in the Dunn process.

C. The activation of shrink characteristic is an unknown inherent result that is immaterial to an obviousness determination.

An unknown inherent result of a combination of references is immaterial to an obviousness analysis if one of ordinary skill would not have appreciated the inherent result.<sup>2</sup> In this case, the proposed unknown inherent result of the combination of Noel, Dupire, and Dunn is the *activation of the shrink characteristic* of the film by the structural disruption of the SWNT material.

The Office action asserts that it was known to structurally disrupt SWNT material by exposure to radiation. (Office action mailed Dec. 14, 2006 at p. 14, §5.) However, this assertion ignores that the proposed unknown inherent result at issue in the present case is not the structural disruption of SWNT material – but rather *the activation of the shrink characteristic of the film* resulting from the disruption. No references of record indicate that one of skill would have appreciated this proposed inherent shrink result. Accordingly, the proposed combination of references does not render the claimed invention obvious.

D. There is no reasonable expectation of success of activating the shrink characteristic.

A *prima facie* case of obviousness requires that the prior art provide a reasonable expectation that the proposed modification will succeed. The required success in this case is the exposure to an amount of radiation energy effective to both structurally disrupt the SWNT material *and* as a result, activate the shrink characteristic of the film. (See claim 1.)

The Office action responds to this line of argument by stating that the Noel infrared radiation that may be used to seal a film would also activate the shrink characteristic of the film. (Office action mailed Dec. 14, 2006 at p. 14, §6.) However, nothing teaches that the Noel amount of infrared radiation would be expected to succeed in structurally disrupting SWNT material. In fact, the Office action did not rely on Noel for this proposition, but provided Dunn to establish sufficient radiation to structurally disrupt the SWNT material. And even if the Dunn radiation were sufficient to structurally disrupt SWNT material, no reference provides a

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<sup>2</sup> For more detail regarding this line of argument, please see Response mailed Sept. 27, 2006 at p. 6, bottom ¶¶ to p. 7.

reasonable expectation that this structural disruption would succeed in *activating the shrink characteristic of the film*, as recited in claim 1. Thus, the claimed invention is not obvious.

### III. Double Patenting Rejection Based on Application No. 11/208,464

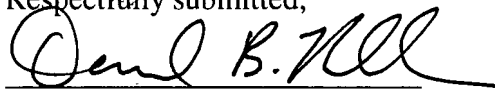
Claim 1 was provisionally rejected under obviousness-type double patenting as unpatentable over claim 14 of pending U.S. Patent Application Serial No. 11/208,464. To overcome this rejection, Applicants submitted with the previous Response a terminal disclaimer of the '464 patent application ("the '464 terminal disclaimer"). However, the recent Office action informs that the '464 terminal disclaimer referred to in the Response was not found with the Response. (Office action mailed Dec. 14, 2006 at p. 13, §1.)

Enclosed is an additional copy of the previously submitted '464 terminal disclaimer, having the certificate of mailing under 37 CFR §1.8(a) on the first page of the '464 terminal disclaimer. The undersigned attorney attests to the timely mailing of the '464 terminal disclaimer; see, for example, the copy of the enclosed return postcard that accompanied the September 27, 2006 mailing of the Response and related materials. The postcard identifies *two* terminal disclaimers – namely, "Terminal Disclaimer (1)" and "Terminal Disclaimer (2)." The "Terminal Disclaimer (1)" refers to the terminal disclaimer for Serial No. 11/142,044, which the Office action acknowledge was received. (*Id.*) The "Terminal Disclaimer (2)" refers to the '464 terminal disclaimer, which the Office action stated was not received. However, the USPTO did acknowledge receipt of *both* terminal disclaimers by date stamping and returning the postcard.

### IV. Conclusion

For the foregoing reasons, Applicants respectfully request that the rejections be reversed.

Respectfully submitted,



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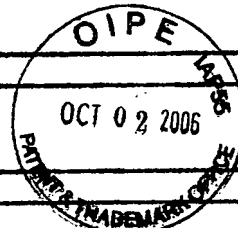
Date: June 13, 2007



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Please acknowledge receipt of the following:

1. Petition For Ext. of Time (2nd) (undup)
2. Response (8 pages)
3. Terminal Disclaimer (1) 2 pages
4. Terminal Disclaimer (2) 2 pages
5. 5th Supplemental IDS
6. PTO 1449 - A Reference
7. \_\_\_\_\_

Pat. Mailed: 9-21-06 : USPTO